



**Report on National Mathematical Centre
programmes related to South-South
Cooperation and Network activities (May
2017- March, 2018)**

Presented by

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Kazakhstan**

COLLABORATIONS AND LINKAGES

Commission on Science and Technology for Sustainable Development in the South (COMSATS)

The Nigerian government signed an international agreement to become a member of COMSATS on 5th October, 1994. By this, the country committed itself to support the programmes and activities of COMSATS. The NMC is a founding member of COMSATS Network of International Centres of Excellence. In particular, NMC is recognised as a Centre of Excellence in Mathematical Modelling. NMC is housing the COMSATS International Thematic Research Group (ITRG) on Mathematical Modelling at NMC and headed by one of the Professors at the Centre.

Nigeria has benefited hugely from COMSATS organisation over the years. This includes:

- i. Research grant awarded to the COMSATS' ITRG on Mathematical Modelling. This grant is still subsisting;
- ii. COMSATS' offer of scholarships to Nigerian Postgraduate students at the COMSATS' Institute of Information Technology (CIIT) Islamabad, Pakistan and International Centre for Chemical and Biological Sciences (ICCBS) Pakistan;
- iii. Co-organised workshops/Conferences; Travel grants, etc.

NMC is a member of COMSATS Centre of Excellence with the COMSATS' International Thematic Research Group (ITRG) domiciled at Centre. ITRG is working on Modelling and Simulation of Pollutants in Air and Water: Effects and Remedies. Members of the ITRG are drawn from COMSATS Centres of Excellence in Nigeria, China, Pakistan, Tanzania, Bangladesh and Indonesia.

RESEARCH

COMSATS International Research Group on Mathematical Modelling and Simulation (ITRG)

The COMSATS' International Thematic Research Group (ITRG) on 'Mathematical Modelling' group is working on joint research project entitled: **Mathematical modelling and Simulation of Air and Water pollution: Effect and Remedies**. The project was specifically designed to determine to what extent the pollution in air and water will have impact on agricultural production, human health and global ecology and economy of South-South because of pollution in the region.

VISITING SCIENTISTS' SCHEME

Professor Dr. Maiz-Ud-din Khan, Chairperson, Department of Mathematics, CIIT, visited NMC on 11 to 13 September, to 13 September 2017 to explore possibilities of collaboration. Areas of common interest identified: Mathematical modelling and simulation, Numerical computations, nonlinear analysis, Geometric function theory, computational fluid dynamics, Game theory, and functional analysis. It was agreed that NMC and CIIT will execute joint research projects in these area. The broad parameter of the joint project was finalized during the visit of Professor Stephen Onah, the Director /Chief Executive of NMC to COMSATS Secretariat, Islamabad, on January 20, 2018.

TECHNICAL SUPPORTS NEEDED FROM CIIT

NMC solicited the support of CIIT in developing ICT Resource Centre at NMC. Linkup NMC to the CIIT virtual campus for enrolment of Nigeria students for online postgraduate studies. Moreover, to link NMC's Mathematical Sciences library with CIIT's Library for resource sharing.

Professor Dr. Maiz-Ud-din Khan's visit to NMC, Abuja, Nigeria



Collaboration with Mathematical Sciences Societies and Associations

In the pursuance of his mandates of *Preparing Nigeria for a leading role in the Mathematical Sciences and enhancing collaboration among Mathematical Scientists especially*, NMC hosted meeting of Presidents of Associations/Societies in the area Mathematical Sciences for high level research activities on 8th February, 2018.



UNESCO - NMC Capacity Building Training in Mathematics for the Girl - child under UNESCO Participation Programme organized at National Mathematical Centre, Abuja, Nigeria (November 9 - December 2017).

An initiative designed to provide adequate training in Mathematical Sciences beyond the usual secondary school classroom teachings to girls who have shown that they have talent in Mathematics in Nigeria. The project is also to provide an avenue for the talented Girl - Child to be properly counseled on how to choose a career in Mathematical Sciences.

to allow the Girl - Child under guidance of experts, brainstorm on factors discouraging them from taking - up career in Mathematical Sciences and attempting to proffer ways of circumventing these factors; and to support the Science, Technology, Engineering and Mathematics (STEM) Education of the UNESCO with particular reference to the female gender.

**NMC – UNILAG JOINTLY ORGANISED WORKSHOP:
WORKSHORP AND FIFTH INTERNATIONAL
CONFERENCE ON MATHEMATICAL ANALYSIS AND
OPTIMIZATION: THEORY AND APPLICATION (11th -
17th March 2018) at the University of Lagos Nigeria**



International Mathematics Day:

NMC and the UNESCO office Abuja celebrated the International Mathematics Day (day) on 14th March 2018. The event was colourful with many activities took place, Road walk, Public Lecture etc. The aim of this was to improve the understanding of the public, the decision makers and the schools the importance of mathematics in scientific education, with special focus on girls and kids



FUTURE PLANS

NMC is planning to:

1. Send delegations to visit other Centres of Excellence, including ICCES (China), NV University (Morocco) etc. to explore possibility of collaboration;
 2. Prepare proposals for joint research projects in consultation with other Centres' of Excellence and relevant organisations in member state having national or regional significance, in the line of Sustainable Development Goals.
 3. Initiate some new topics for the COMSATS International Research Group on Modelling and Simulation to work on.
 4. Create a new International Research Group on Mathematics.
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